Comparison of anterior segment measurements using rotating Scheimpflug imaging and partial coherence interferometry

AIM:

To compare central corneal thickness (CCT) and anterior chamber depth (ACD) measurements using rotating Scheimpflug imaging and partial coherence interferometry.

METHODS:

As part of the first phase of Shahroud Eye Cohort Study with ۱۹۰۵subjects of ٤۰to ٦٤years of age, CCT and ACD were measured using Scheimpflug imaging with the Pentacam (Oculus, Inc., Lynnwood, WA, USA) and partial coherence interferometry with the Allegro BioGraph (Wavelight, Erlangen, Germany.(

RESULTS:

After applying exclusion criteria, we had data of ۳۸۷ ٤subjects with a mean age of ٦.۲±۵۰.۷ years. Mean CCT with Pentacam and BioGraph were ۳۳.۲±۵۲۸.٦µm and ۳۲±۵۲۵.٦µm respectively; the difference was statistically significant (P ,(۰.۰۰۱>but the correlation was high (R=۰.۹۲۰). Mean ACD measurements using Pentacam and BioGraph were ۰.۳۵±۲.٦۸mm and ۰.۳۳±۲.٦۲mm respectively; the inter-device difference was significant (P (۰.۰۰۱>with high correlation (R=۰.۹٤٤). The %۹۵limits of agreements between devices were -۲۲.٦۵µm to ۲۸.٦۱µm and -۰.۱٦mm to ۰.۲۹mm for CCT and ACD measurements, respectively.

CONCLUSION:

For both CCT and ACD, the BioGraph gave significantly lower values than the Pentacam (P .(۰.۰۵>Despite the high inter-device correlation, the %۹۵limits of agreements were wide, and this may limit their interchangeability in measuring the CCT and ACD.